

Docket No.: 242926US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:
Shigeru KURAMOTO, et al.

GROUP: 1742

SERIAL NO: 10/663,786

EXAMINER: ROE, J. R.

FILED: September 17, 2003

FOR: TITANIUM ALLOY AND PROCESS FOR PRODUCING THE SAME

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Shigeru Kuramoto who deposes and states that:

1. I am a graduate of The University of Tokyo and received my Doctor of Engineering degree in the year 1994.
2. I have been employed by Toyota Central R & D Laboratories, Inc. for 6 years as a researcher in the field of Materials Science.
3. The following experiments were carried out by me or under my direct supervision and control.
4. Specimens 1-6 according to the invention were prepared and compared with specimens C2-C4 which do not conform to the oxygen content and M_{eq} limitations in claim 1. Parameters within the limitations of claim 1 have been **embolded** and presented in 12 pt numerals in the following table.

Test Piece No.	Composition (mass%)			Mechanical Characteristic				Structure after Solution Treatment	Occurrence of Stress-Induced Transformation
	Alloying Element (mass%)	Oxygen (mass%)	Moeq	Young's Modulus (GPa)	Tensile Strength (MPa)	Tensile Elastic Limit Strength (MPa)	Elastic Deformability (%)		
1	Ti-8%V-1%Fe	0.6	8.26	60	1392	1203	2.0	β Single Phase	None
2	Ti-10%Mo-6%Zr-4.5%Sn	0.6	10	63	1315	998	1.9	β Single Phase	None
3	Ti-25%Nb-2%Ta	1.5	7.44	65	1820	1569	2.2	β Single Phase	None
4	Ti-32%Nb-2%Ta-3%Zr	0.8	9.4	50	1593	1324	2.8	β Single Phase	None
5	Ti-15%Nb	0.6	4.2	65	1324	1160	1.9	β Single Phase	None
6	Ti-36%Nb-2%Ta	1.5	10.52	67	1617	1302	2.7	β Single Phase	None
C1	Ti-40%Nb-10%Ta-5%Zr	0.3	13.4	80	981	789	1.0	β Single Phase	None
C2	Ti-4%Mo-3%Al	0.6	1	100	1410	1121	1.1	α Phase + β Phase	None
C3	Ti-32%Nb-2%Ta	0.2	9.4	50	904	487	1.0	α' Phase + β Phase	Occurred
C4	Ti-40%Nb-2%Ta	1.5	11.64	80	1710	1568	1.2	β Single Phase	None

6. As apparent from the above comparisons, titanium alloys conforming to the parameters required by claim 1 have superior physical properties as well as exhibiting a β single phase. Comparative alloys, C1 and C4 also exhibit a β single phase, however, they do not have other compositional and physical properties required by claim 1.

7. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

8. Further deponent saith not.

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22850

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(OSMMN 05/06)

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Signature

Shigetaka Kuramoto

Date

Feb. 25, 2008